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A case study of primordial thought language and body boundary imagery in discourses of religious-mystical and psychotic altered states of consciousness

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Abstract
Religious-mystical and psychotic altered states of consciousness (ASC) are assumed to share common phenomenological and psychobiological features, including regressive cognition and changes in body boundary awareness. This study aimed to assess the frequency and strength of associations between primordial thought language and body boundary imagery in the discourses of mystical and psychotic-mystical ASC. The mystical discourse examined here is Saint Teresa of Avila's (1567) mystical writing "*The Way of Perfection"*, and the psychotic discourse is Daniel Paul Schreber's (1903) autobiographical writing *"Memoirs of My Nervous Illness"*. The mystical text differs from the psychotic text in the frequency of primordial thought language and penetration imagery. Positive associations were also found between primordial thought language and penetration imagery, and barrier and penetration imagery, whereas the psychotic text yielded a positive association between barrier and penetration imagery only.

Keywords: primordial thought language, body boundary imagery, altered states of conscious ness, mystical experiences, psychosis, Saint Teresa of Avila,Daniel Paul Schreber

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Introduction

This study aims to investigate the frequency and strength of associations between body boundary imagery and primordial thought language in discourses of religious-mystical and religious-psychotic altered states of consciousness (ASC) based on Saint Teresa of Avila's (1567) mystical writing "*The Way of Perfection"*, and Daniel Paul Schreber's (1903) autobiographical writing *"Memoirs of My Nervous Illness"*. It is assumed that the linguistic features of primordial thought language and body boundary imagery in these discourses might offer some insight into the

cognitive organization of mystical and psychotic experiences that can be explained and interpreted by using various psychoanalytic concepts and theories. Hence, this paper begins by presenting a brief background on how traditional Freudian and contemporary relational psychoanalytic theories relate to religious-mystical experiences and pathological delusions. Subsequently, the introduction discusses psychoanalytic, psychological and linguistic research and theories, on mystical and psychotic experiences, in relation to primordial and conceptual cognitive functioning and body boundary awareness.

Psychoanalysis and mystical experiences

Altered states of consciousness (ASC) generally refer to personal experiences that are based on shifts of psychological and cognitive functioning as compared to conscious states of experience. Mystical experiences are a form of ASC in which the mystics believe that they have established a transcendental experience with the Absolute, or Ultimate Reality (Cook, 2004). They are often brought about and deepened through some form of ritualistic behaviour, such as prayer, breathing and visualizations exercises, chanting or meditation (Heriot-Maitland. 2008). Due to the similarity of phenomenological attributes, mystical and pathological delusions are often difficult to differentiate from one another (see Lukoff, 1985), but their classification is largely informed by the Freudian psychoanalytic view (Graetz Simmonds, 2006). This view considers religion to be a neurotic universal compulsion of humanity that stems from suppressed instinctual impulses and the ambivalent oedipal feelings associated with neurosis (Freud, 1913, 1927). Hence, a belief in God is based on an individual's "terrifying helplessness in confronting inner and outer forces in childhood and the need for protection, which was originally provided by the father" (Freud, 1927, p.30). The inability to withstand the discomfort of being exposed to threatening sensory perceptions results in turning towards the wishful illusion of an omnipotent and protective God upon which the believer projects the lost feeling of narcissistic omnipotence (Fenichel, 1954). In this sense, the religious belief assumes the function of a coping mechanism in handling existential vulnerabilities, such as annihilation anxieties.

Contemporary psychoanalytic theories have shown an increased interest in exploring and re-evaluating the interaction between psychoanalysis and religious-spiritual belief. One theory is that religious illusion might not represent regression to a pathological infantile state; rather, it represents a state of adaptive regression allowing the individual to repair unconscious conflicts by confronting and overcoming aspects of the false self, which then allows the individual to return to the true self (Fauteux, 1995; Jones, 2007). The notion of a reparative state resonates with Melanie Klein's manic-depressive stage of infant development (1935, 1946) during which an infant seeks to mourn the mother as an object loss and to integrate all the "bad parts", such as aggressive drives, that were projected onto the mother during the paranoid-schizoid period. The integration process generally begins during infancy but is assumed to continue throughout a person's life, allowing the individual to integrate the split "good" and "bad" parts in his or her personality and thus to seek self- and other-whole object integration. The positive view of religious illusion as a reparative process was bolstered by the proposition of a potential third space (Winnicott 1971) that represents a missing link between the Freudian reality principle and the pleasure principle and thus reframes religion as a transitional phenomenon (Meissner, 2008). Congruent with the cognitive problem-solving model that assumes an adaptive and experiential problem solving function of ASC (Batson & Ventis, 1982; Jackson & Fulford, 1997), the creative potential of mystical experiences has been associated to the process of adaptive regression that is

characterized by strong emotional arousal, the so-called "peak-experience", and hallucinations in which the individual gains a new insights and perspective and thus leading to adaptive changes of behaviour (Allison, 1968).

Primordial thought in religious-mystical experiences

Regression in religious experiences has been also associated to the Freudian principle of primordial cognition (Wilson, 2009). The notion of primordial and conceptual thought functioning represent equivalents to the Freudian concept of primary and secondary process.[1] Thus, Freud (1900) suggested that the primary (primordial) and secondary (conceptual) processes represent distinct modes of cognition within the psychic apparatus. Primary process thought is concrete, irrational, free-associative, as well as being unrelated to logic, time and spatial constrains, and free from social and moral conventions. It is assumed to function in relation to the primary process principles of displacement, condensation, and symbolization (Freud, 1900). Primary process thought is also the principal awareness of young children and has been associateed with the cognitive operations of ASC, such as dream, meditative, mystical trance and drug-induced hallucinatory states. In contrast, secondary process thought obeys the abstract principles of grammar and logic, time and space, social conventions, and reality-tested knowledge in typical, everyday situations for older children and adults.

Melanie Klein's (1935, 1946) paranoid-schizoid and depressive position might represent forms of cognitive functioning complimentary to Freud's proposition of the primary and secondary process (Robbins, 2011). Hence, the paranoid-schizoid position and primary process are based on perceptions in which aspects of the self and others remain undifferentiated, whereas in the depressive position and secondary process, the self and other are recognized as differentiated entities. However, both processes might be complementary and interconnected. In particular, the gradual separation from internal fantasies and external events and a transitional integration of the reality principle is assumed to take place within an intermediate transitional space (Winnicott, 1971). In contrast, a mother's intolerance to contain these emotions might lead to the infant being unable to introject the mother's containing function. The infant's uncontained anxiety exists then as a nameless anxiety that lacks a symbolic shape that leads to premature individuation. The transformation of primary process to secondary process cognition is also based on the experience of the self as a subject in relation to the subjectivity of the other. Hence, it assumed that the secure and containing ego boundaries of the mother that gradually transform the infant's anxiety and aggressive feelings and thus for the infant to integrate these threatening emotions in a more tolerable form, and thus to develop a sense of self-awareness and relatedness (Bion, 1962; Bollas, 1994). In this sense, the interaction of the self and other's realities shape the development of a coherent self-schema, as much as mental representations based on the experiences of multiple social selves (Benjamin, 1992; Mitchell, 1993). The notion of interrelated primary and secondary processes has been also suggested in religious experiences based on the assumption that the religious experiences is situated within an intermediate space that allows the believer to make use of inherent capacity of imagination and that might fulfil an ontological function (Meissner, 1984; Rizzuto, 1979).

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[1] The concepts of primordial and conceptual thought are primarily influenced by Werner's (1948) and Goldstein's (1939) theories of regressive cognition that are based on a drive- and sensation-orientated assumption as compared to a narrowly Freudian psychoanalytic view on primary process thought.

Primordial thought in schizophrenia

How primordial thought might be associated to the formal thought disorder that occurs in schizophrenia has been extensively researched (e.g., Arieti, 1974; Meloy, 1986). The cognitive deficiencies of formal thought disorder are based on intrusions of unintended memories and unstructured, ambiguous, externally derived sensory inputs (Hemsley, 1993, 1996). Thus, an individual diagnosed with schizophrenia may not be able to selectively attend to internal and external stimuli, for which internal events are misinterpreted as a causal consequence of externally derived perceptions. In particular, the executive processes of the working memory are connected to referential processes and emotion schemas that verbally express both concrete and abstract experiences (Bucci, 1997). Psychological research puts forward that emotion schemas are acquired in early mother-attachment, and allows us to identify emotions in the form of physical sensations and cognitive awareness. An insecure attachment style is associated with the development of dissociative disorders and schizophrenia, which include the dissociation of parts of the self, including emotions, bodily sensations and cognitive processes (for a brief literature review see Mikulincer & Shaver, 2007). These dissociative tendencies are related with a disorganized attachment style in which a child experiences the caregiver as being frightened or frightening at one time, and other times as available and caring (Main & Hesse, 1990; Liotti, 1992; in Mikulincer & Shaver, 2007, p. 402). As a result of being exposed to the caregiver's inconsistent and erratic expressions, the child develops an incoherent and fragmented self-image, and thus the ability to functionally integrate anxieties and other threatening emotions that remain split off the child's conscious awareness. The lack of a functional infant-mother bond and presence of repressed painful emotions continue to exist in form of a so-called "black hole" (Grotstein, 1989, 1990).[2] According to Gerzi (2005), the black hole is encapsulated by a narcissistic envelope that allows some memory fragments to survive and meanwhile shielding off the painful and unbearable memories and feelings. This transient state is however interrupted by the emergence of the symbolic tear (or original trauma) in the envelope that creates a chaotic internal state of acute threat. The narcissistic part of the self attempts to ward off these strange experiences with defensive processes, such as splitting and denial, resulting in the individual being pulled into the "black hole" and thus causing the fluctuation between intense and overwhelming feelings, and states of emotional void.

Bion (1955) puts forward that the notion of splitting is also reflected in the schizoid language that actively splits objects when the internal persecutory fear is projected unto external objects and perceived by the patient as an external destructive threat and the loss of internal good object. Due to the destructiveness of splitting on the actual links within thought processes, the schizoid mode of thought is typically characterized by an inability to use and differentiate between concrete (primary process/primordial thought) and abstract forms (secondary process/-conceptual thought) of representation. The inability to make such a distinction is assumed to function as a defence mechanism to repress unconscious emotions and to regress to a primordial state consistent with the schizoid's sense of incomplete ego-boundary differentiation (Searles, 1962, p.28). The illusionary withdrawal from an external reality to an internal reality assumes then a protective function to ward off feelings of aggression that are perceived to invade the body, threatening to annihilate the remaining sense of ego (Klein, 1928). In contrast, schizoid

[2] Grotstein (1989, 1990) holds the existence of the black hole as the single most important factor in psychotic illness.

thinking emphasizes spatial and behavioural aspects (Jackson, 1995) through the use of subjective metaphorical formations that are generally incomprehensible and inconsistent with socially agreed upon symbols and concepts (Bateson, Jackson, Haley, & Weakland, 1956). The concreteness of literal thought in schizoid patients has also been termed de-animation (Mahler, 1958) and de-symbolization (Searles, 1962).

Linguistic analysis of primordial thought

Computer-assisted quantitative linguistic research has investigated the occurrence and frequency pattern of primordial and conceptual thought language by using the Regressive Imagery Dictionary (RID) (Martindale, 1975, 1990) (see method section). In relation to mystical texts, Martindale (1974, 1979) investigated so-called night journey narratives (e.g., Aeneid, Book VI) and more complex texts that describe a hero's spiritual journey to God (e.g., Dante's Divine Comedy) (Martindale 1987, 1990). The hero's journey in these narratives was hypothesized to represent an initial regression from conceptual to primordial thought, followed by a return to conceptual thought awareness. The results confirmed this hypothesis and showed a high frequency of primordial thought language as the hero transitioned to the mystical world, whereas a return to temporal realms was reflected by a reduction in primordial thought language. West (1991) also predicted that the awareness of primordial regression would be reflected in religious-mystical experiences in the form of high frequencies of primordial thought language. The results showed that the entire content of the King James Bible reflects a homogenous rise-fall-rise-fall-rise pattern of primordial thought language, thus lending support to Evelyn Underhill's (1911) five-stage model of spiritual development in Christian mysticism. The results also provide some evidence for the Freudian notion of regression to ontologically earlier ways of organizing in religious experiences.[3] Conversely, the results, in particular Martindale's studies on night journey narratives, separate the occurrence of primordial and conceptual thought functioning, and thus contradict the before mentioned psychoanalytic notion that there is primordial thought in conceptual thought, and vice-versa.

Computer-assisted content analysis using the RID has also been used to gauge the frequency of primordial thought language in patients diagnosed with paranoid schizophrenia, non-paranoid schizophrenia, and patients with non-psychotic disorders. The analysis shows that the speech of individuals diagnosed with paranoid schizophrenia reflects significantly higher frequencies of primordial thought language (in particular Icarian lexis[4]) than non-paranoid schizophrenics and non-psychotic individuals with other psychiatric disorders (West and Martindale, 1988). Thus, this result provides some support for the psychoanalytic assumption that the development of schizophrenia is preceded by a regression to an early form of organizing experiences that is based predominantly on primordial functioning.

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[3] The results were also replicated in Wilson's (2009) study *"Barrier and penetration imagery in altered states of consciousness discourse: replicating the five-stage model of Christian mysticism in the Bible that investigated"*, based on a slightly different methodology.

[4] Icarian lexis represents a set of primitive and pre-linguistic symbols (e.g., spatial references, fire, and water) for drives and emotions (Martindale, 1981).

Regressive body boundary awareness in religious experiences

The notion of regression in ASC is also associated with changes in body boundary awareness, including merging, depersonalization, and blurring of body boundaries with respect to an individual's sense of separateness to time and space (Harrison, 2008; Wilson, 2008). Hence, the notion of blurred boundaries in religious-mystical experiences may assume the salient function of connecting to and identifying with God. This fusion experience (Ludwig, 1966; Prince & Savage, 1966) has been characterized as "joyful, blissful, luminous, spaceless and timeless, infinitely peaceful, free from all pain and concern" (Hartcollis, 1976, p.215), and an Absolute State of Unitary Being (Newberg, d'Aquili, & Rouse, 2001). In a letter to Sigmund Freud (Freud, 1927), Romain Rolland referred to this religious sentiment of mystical oneness and cosmic oblivion as an "oceanic feeling". Freud proposed that this oceanic feeling might represent regression to an early phase of limitless narcissism that might facilitate the fulfilment of a nostalgia for the mother's breast, thereby achieving a state of fusion and unity with the mother. In such a fusion, religion and spirituality would symbolize the maternal world (Mahler, 1968; Lewin, 1950; Saroglou, 2003). The state of limitless narcissism and oneness is initially experienced by the infant when it is not able to completely differentiate between internal and external, or between self and other. The primal object loss of the mother as a love object and the breast as a satisfactory oral stimulus is assumed to be a precondition for the infant to recognize its body boundary in relation to reality, and thus to create the concept of ego (Freud, 1905).

Relational psychoanalysis has also conceptualized the development of body boundary awareness in relation to the autistic-contiguous position that is based on primitive sense-orientated experiences that are derived in the mother-infant (Ogden, 1989). These primitive experiences are conceptualized in relation to the infant's awareness of its skin boundary that creates an internal space by setting itself apart from the environment and other objects. Drawing on Bick's (1968) theory on the function of skin in early object relations, the disturbed development of the primal skin may result to the second skin formation that wards off these anxieties as an attempt to construct an alternative holding skin container of the self-boundary through the use of reassuring rhythmic movements and muscular tensions. The defective formation of a containing skin formation may result in infantile psychotic disintegration or autistic unintegration (Meltzer, 1975).

Regressive body boundary awareness in psychotic experiences

The blurring of psychological boundaries, or within the pathological terminology the so-called ego-boundary disturbance or passivity phenomenon, is commonly perceived as a typical feature of psychotic regression. Psychotic body distortions are expressed in various forms, including bizarre bodily sensations and functions, feelings of depersonalization and changes in body consistency (Guimón, 1997). In such a weakened ego-boundary, the individuals perceive themselves as the passive recipients whose own internally generated thoughts are controlled and implanted by an external force, such as auditory hallucinations and thought insertions, and equally believing to be able to surpass others boundaries and broadcasting their own thoughts to other people (Mullins & Spence, 2003). Stephens and Graham (1994) also differentiate between through processes that have been influenced by an external force and thoughts that have been merely inserted into the mind of an individual.

More recent developments contextualized symptoms of schizophrenia (e.g., changes of body boundary awareness) in relation the continuum of schizotypy (Peters, 2001). Individuals with schizotypal personality disorders "may be superstitious or preoccupied with paranormal phenomena that are outside the norms of their subculture" (APA, 2000, p.701). The conceptualisation of psychotic experiences in relation to a continuum assumes the occurrence of a healthy functioning individual with schizotypal personality traits at one end of the continuum, and the presence of schizophrenia symptoms at the polar opposite end of the continuum (Claridge, 1994). Based on this continuity model of psychotic characteristics, the differentiation of individual differences (i.e., personality traits) and mental health disorders (e.g., psychotic symptoms) becomes blurred and obscured (Peters et al., 1999). Empirical evidence has also shown that high scores on positive symptoms were associated with out-of-body experiences (McCreery & Claridge, 1995), profound religious experiences (Jackson, 1997), gifted creativity (Post, 1994), and members of new religious movements (Day & Peters, 1999; Peters et al., 1999). The attributed creativity to high schizotypy scorers has also lead to the proposition that psychotic experience might have an evolutionary benefit, such as problem-solving function (e.g., Hariot-Maitland, 2008).

Linguistic evidence of body boundaries

Freud (1923) suggested in *"The Ego and Id"* that a person consists of a unity between a body and a psyche, where "the ego is first and foremost a bodily ego…and the ego is ultimately derived from bodily sensations" (p.26). Externally derived bodily sensations and feelings are assumed to be conscious perceptions, whereas internal perceptions are unconscious processes that are transformed into conscious perceptions and take the form of word presentations (Freud, 1923). Thus, verbal expressions reflect residues of unconscious sensory perceptions that interact with meaning constructions, interpretative functions, and encoding and retrieval processes. Vergote (1991), however, proposes that a person is not made up only of an organic body and psychic body, but also consists of an additional duality: the psychic body and the symbolic system of language. According to this view, the organic body and the symbolic system of language meet at the primordial junction in the psychic body, which allows the person to use cultural symbols and language as a means of establishing a relation between the organic and psychic body, and equally to differentiate between the psychic 'I' and the bodily 'I'. The strength of these underlying psychological structures of the primordial junction that transforms unconscious processes to verbal expressions have been investigated in empirical research in relation to body boundary awareness.

Fisher and Cleveland (1956, 1958) firstly proposed a content-analysis scoring system of body boundary awareness based on verbal responses of Rorschach inkblot tests by measuring barrier imagery (i.e., body boundary definiteness) and penetration imagery (i.e., body boundary permeability). The body image scoring system has been used in qualitative and quantitative studies to investigate body boundary distortion in schizophrenia. The majority of research, however, produced conflicting results. Hence, no solid evidence was found that individuals diagnosed with schizophrenia would have more or less definite body boundary awareness, or score lower on barrier imagery, than either individuals diagnosed with neurotic disorders or healthy individuals. In several studies, however, individuals diagnosed with schizophrenia often had more definite body boundaries, by scoring higher on barrier and lower on penetration imagery, than either individuals diagnosed with neurotic disorders or healthy individuals. It has

been also demonstrated that boundaries were more definite in paranoid schizophrenia as compared to neurotic disorder or healthy controls. The heightened sense of boundaries in individuals with paranoid schizophrenia has been attributed to an increased sense of grandiosity and power as a central theme of their delusional "cover story" (Fisher, 1970; Fisher, 1986).

In addition, Fisher and Cleveland's (1956, 1958) scoring system of body boundary awareness has been investigated in non-pathological ASC. For example, studies on extra-sensory perceptions have been shown that individual scoring high on ESP showed lower body boundary definiteness (i.e., higher penetration and lower barrier imagery scores) than individual with low ESP scores (Schmeidler & LeShan, 1970). Similarly, penetration scores were higher in hypnotized individuals than individuals of ordinary state of consciousness (Saraceni, Ruggeri, & Filocamo, 1980). The body boundary scoring system has been also applied to other text types than inkblot responses, such as dream narratives (Ruggeri & Saraceni, 1981).

A computerized version of Fisher and Cleveland's scoring system, the so-called Body Type Dictionary (BTD) (Wilson, 2006) (see method section), has also investigated the frequencies of barrier and penetration imagery of religious texts (Wilson, 2008, 2009). Wilson (2008) applied the BTD to the Douay-Rheims Bible working with the hypothesis that the religious text would have a frequency pattern of barrier and penetration imagery equivalent to West's (1991) frequency pattern of primordial thought language. In fact, the results showed that the frequency of penetration imagery reflects a five-stage pattern similar to the one found in the primordial thought language of the King James Bible (West, 1991). This finding lends support to the idea that barrier and penetration imagery reflect different kinds of psychological phenomena, and also that the blurring of body boundaries might relate to regressive cognitive functioning associated with religious-mystical experiences.

Case study data and research hypotheses

This study is based on Saint Teresa of Avila's (1567) mystical writing *"The Way of Perfection"* and Daniel Paul Schreber's (1903) autobiographical writing *"Memoirs of My Nervous Illness"*. The former text refers to an early writing of Saint Teresa of Avila, who is regarded as one of the principal Spanish mystics of the 16th century and was a key figure in the reform of the Carmelite order. The mystical writings of Saint Teresa have also been the subject of a psychoanalytic inquiry whose goal was to outline the hysterical dimensions in mystical delirium (see Vergote, 1988). The latter text by Schreber was the source of Freud's (1911) classic case study entitled "*Psychoanalytic Notes upon an Autobiographical Account of a Case of Paranoia (Dementia Paranoides)"*, which aimed to demonstrate that paranoid schizophrenia stemmed from repressed homosexual wishes in combination with an underlying father complex (Quinodoz, 2004). Schreber's autobiography has also been the subject of computer-assisted content analyses that critically contrasted their findings with previous psychiatric and explanations of "Memoirs" (Klein 1976; Laffal, 1965; Martin, 2008; O'Dell & Weidman, 1993). Notably, though, Saint Teresa's mystical writing *"The Way of Perfection"* and Schreber's *"Memoirs of My Nervous Illness"* have to be differentiated. The religious-mystical text represents an objective post-hoc discourse of a transient religious-mystical experience (see Wilson, 2008, pp.44-47) that may be perceived as real while the person is experiencing this religious-mystical experience, but is often not considered to be real once the person returns to everyday consciousness (D'Aquili & Newberg, 2000). In contrast, the psychotic text exemplifies the writing of a psychotic experience as a psychiatric symptom of a permanent psychotic disorder.

Drawing on previous empirical research that investigated primordial thought language and body boundary imagery in the discourses of mystical and psychotic ASC, the first hypothesis, then, (H1) is that the psychotic text has a higher frequency of primordial thought language than the mystical text. In relation to psychoanalytic theory of formal thought disorder that assumes a dysfunctional emotional awareness in schizophrenia, the second hypothesis (H2) is that the mystical text has a higher frequency of emotion language (i.e., positive affect, affection, sadness, anxiety, aggression, expressive behaviour, and glory lexis) than the psychotic text, whereas the psychotic text would use more Icarian lexis than the mystical text. With respect to body boundary awareness, the third hypothesis (H3) is that the mystical text has lower frequencies of barrier and higher frequency of penetration imagery as compared to the psychotic text. In addition, the fourth hypothesis (H4) is that primordial thought language is positively associated with penetration imagery, but negatively associated with barrier imagery in both the mystical and psychotic text.

Data and Method

Texts

The first text is the English translation of the mystical discourse of Saint Teresa of Avilia's (1567) *"The Way of Perfection"*. The second text is an English translation of Daniel Paul Schreber's (1903) autobiographical writing *"Memoirs of My Nervous Illness"*. The introductory texts, prefaces, translators' notes, and footnotes were not included in the analysis. Both texts were divided into segments according to the original divisions by chapter. The first text comprises 43 segments, and the second text 31 segments.

Objective measures

RID. The RID is a coding scheme that measures the frequency of primordial and conceptual thought language, and emotion language. The RID contains about 3200 words and roots that are stored in 29 primordial thought categories, 7 conceptual thought categories, and 7 emotion categories (see Appendix Table 1). In particular, primordial thought is measured on the sum of the categories Drive, Regressive Cognition, Perceptual Disinhibition, Sensation, and Icarian Imagery. Empirical research using the RID has also produced consistent evidence that proves the categories of the RID a valid and reliable tool to measure primordial and conceptual thought language (Martindale, 1975; see also Wilson, 2011). The semantic content and categories were derived from empirical literature and studies on primordial process cognition (Martindale, 1975, 1990) based on the assumption that the lexical content of a text would reflect unconscious material and psychological states, referred to as lexical leakage (Spence, Scarborough, & Ginsberg, 1978). For example, greater right brain hemisphere activation has been associated with a high frequency of primordial thought language in adults (Galin, 1974; Martindale, Covello, & West, 1986). Hines and Martindale (1973) also confirmed the theory of the psychoanalytic aesthetic, which proposes that highly creative individuals would use more primordial thought language than non-creative individuals (Kris, 1952). Higher frequencies of primordial thought language have been also identified more often in the stories of young children than in the stories of adults (West, Martindale, & Sutton-Smith, 1985). The same finding also holds for stories written under the influence of psychotropic drugs, as opposed to the stories of control groups

(Martindale & Fisher, 1977; West, Martindale, Hines, & Roth, 1983); fetish stories, as compared to normative romantic stories (Wilson, 2002); the poetry of pathological writers versus non-pathological poets (Martindale, 1975); and the folktales of primitive cultures, in contrast to those of more complex cultures (Martindale, 1976). Theoretical concepts that assume some similarity to primordial thought have also been proposed from a number of disciplines, such as the primitive mentality hypothesis (Lévy-Bruhl, 1910), preformal thought (Piaget, 1954), sensate thinking (Sorokin, 1957), three processes of functioning (Aulagnier, 1975), semiotic and symbolic (Kristeva, 1996), and la langue (Johnston, 2009).

BTD. The BTD is a computerized dictionary that calculates the frequency of semantic items categorised as barrier imagery and penetration imagery based on Fisher & Cleveland's (1956, 1958) scoring system of High and Low barrier personalities. An individual would project their one's body boundary awareness upon the surfaces of surrounding objects, for which barrier imagery scores relate to surfaces being described as protective and enclosing, whereas penetration imagery scores relate to responses referring to the weakness and permeability of a perceived surface. According to this scoring system, a high frequency of boundary imagery corresponds to a high barrier personality, and a low frequency of barrier imagery indicates a low barrier personality. However, both personality categories are assumed to represent independent personality dimensions, rather than opposite ends of a polar personality model.

The BTD contains 551 words for barrier imagery and 231 words for penetration imagery, and 70 exception words that prevent the erroneous matching of ambiguous word stems that are assigned to 12 semantic categories (Wilson, 2008). The semantic categories of barrier and penetration imagery can be seen in the Appendix Table 2.[5] The BTD was first applied to compare the frequencies of barrier and penetration imagery in fictional rubber boots fetish narratives and modern romantic fiction narratives (Wilson, 2006). Based on the prediction that clothing fetishism would yield an inflation of both barrier and penetration imagery (Newbold, 1984), the results, however, indicated that the fetish narratives showed a higher frequency of barrier imagery but lower frequency of penetration imagery as compared to the romantic narratives, which might indicate a compensation of a weak boundary differentiation, referred to as exo-skeletal defence (Popplestone, 1963). Theoretical models similar to Fisher and Cleveland's thick and thin barrier personality have been proposed, including skin ego (Anzieu, 1985), amoebic self-theory (Burris & Rempel, 2004), and crustacean and amoeboid self-protection in autism (Tustin, 1981).

Content analysis. The RID and BTD were applied to the texts by using the PROTAN content analysis software program that measures the occurrence of category-based lexical content in a text (Hogenraad, Daubies, & Bestgen, 1995; Hogenraad, Daubies, Bestgen, & Mahau, 2003). The PROTAN software divided each text into its chapter segments. A lemmatisation process was then applied to reduce inflected words to their base form. For example, *"agrees, agreed, agreeing"* were all reduced to *"agree"*. Subsequently, the lexical content of the segmented and reduced texts was matched against the predefined categories of the RID and BTD. PROTAN computes

[5] Wilson (2006) excluded the lexical items 'boot(s)', 'Wellington(s)', 'welly/wellies', and 'mud' in order to control for increased lexical focus on boots in the rubber boot fetish narratives. In fact, the first version of Fisher and Cleveland's body boundary scoring system (1956) contained 'clothing items with unusual covering and decorative function', and only 'buildings with unusual structures', whereas the second edition (1958) included all types of 'clothing items', 'vehicles', and 'buildings'.

two raw counts of lexical occurrences. The density count shows how many distinct lexical items (i.e., types) match each dictionary category; the frequency count represents how many lexical items in total (i.e., tokens) match dictionary categories. The frequency rate was used in this study based on the following formula:

$$Frequency\ rate = 1000\sqrt{\frac{frequency\ count}{no.of\ tokens\ in\ segment}}$$

Statistical analysis. All statistical calculations were performed with the statistical language and software "R" (R Development Core Team, 2011) and the R:commander {Rcmdr} package (Fox, 2005). An initial Shapiro-Wilk test (Shapiro & Wilk, 1965) showed that the majority of lexical variables were not normally distributed in the segments of both text types. Hence, a non-parametric significance test appeared most suitable to assess the frequencies of the linguistic variables. A two-tailed Mann-Whitney U test (Mann & Whitney, 1947) with a $p < .05$ level of significance was used to compare the values of primordial and conceptual thought language, emotion language, and body boundary imagery between the two populations (i.e., the two authors). Subsequently, a two-tailed Kendall's tau-b rank correlation coefficient test (Kendall & Babington Smith, 1938) was used to assess the strength of association between primordial and conceptual thought language, emotion language, and barrier and penetration imagery. The Kendall's tau rank correlation coefficient has been suggested to be more suitable when applied to psychiatric data as compared to either the Pearson's product momentum correlation coefficient or the Spearman's rho rank correlation coefficient (Arndt, Turvey, & Andreasen, 1999).

Results

Descriptive statistics

The total word count and word count was calculated for all segments of the mystical and psychotic texts. The results showed that the mystical text used 74,897 words in total with a mean of 1,741.79 words per segment (SD = 704.49), whereas the psychotic text used 84,219 words in total with a mean of 2,716.74 words per segment (SD = 1315.90). A Mann-Whitney U test indicated that the segments of the psychotic text used in total significantly more words, $p < .001$, and also a more diverse vocabulary, $p < .001$, as compared to the segments of the mystical text. The descriptive statistics of text length per text type and segment are represented in Table 3.

Table 3. Descriptive statistics of total text length and text length per segment in the texts *"The Way of Perfection"* and *"Memoirs of My Nervous Illness"*.

	Text type	
Segment	***Way***	***Memoirs***
1	646	788
2	953	3638
3	1785	2537
4	2238	90

5	3020	3322
6	1270	4146
7	1678	4417
8	2568	4061
9	901	5104
10	957	4438
11	1611	3340
12	997	3344
13	1752	3553
14	1754	3703
15	665	2784
16	1524	3170
17	2428	2641
18	1466	2161
19	1777	3039
20	3495	2291
21	1480	2697
22	1703	3249
23	1662	1961
24	1233	447
25	1229	375
26	754	779
27	1932	2721
28	1213	4116
29	2316	1621
30	1688	982
31	1517	2702
32	3092	-
33	2599	-
34	1366	-
35	2919	-
36	1157	-
37	2655	-
38	999	-
39	2747	-
40	1324	-
41	1673	-
42	2137	-
43	2017	-
Mean	1741.79	2716.74
Median	1673.00	2784.00
SD	704.49	1315.90
IQR	1009	1677
Total word count	74897	84219

In addition, the results indicated that in total, conceptual thought language had a higher mean frequency than primordial thought language. As for emotion language, the frequency of affection lexis (M = 3.12, SD = .93) was highest in the mystical text, and aggression lexis (M = 2.51, SD = .88) was highest in the psychotic text. In contrast, positive affect language had the lowest frequency in the mystical text (M = 1.23, SD = .72), and sadness lexis had the lowest frequency (M = 1.00, SD = .65) in the psychotic text. There was only a marginal difference in frequency between barrier and penetration imagery in both text types. The descriptive statistics of primordial and conceptual thought language, emotion language, and body boundary imagery can be seen in Table 4.

Table 4. Mean, median, standard deviation, and interquartile range of primordial thought language, emotion language, and body boundary imagery in the texts *"The Way of Perfection"* and *"Memoirs of My Nervous Illness"*.

	Way (N = 43)				***Memoirs (N = 31)***			
Linguistic variable	***Mean***	***Median***	***SD***	***IQR***	***Mean***	***Median***	***SD***	***IQR***
Primordial thought	6.26	6.09	.88	1.14	8.84	8.75	.99	1.21
Icarian	1.98	1.89	.81	.75	2.83	2.86	1.02	1.14
Conceptual thought	10.42	10.35	.62	.68	10.51	10.54	.56	.90
Emotion	5.76	5.63	.78	.99	4.23	4.22	.87	.96
Positive affect	1.23	1.33	.72	.64	1.04	1.09	.56	.64
Anxiety	1.64	1.54	.68	.89	1.07	1.16	.63	.91
Sadness	1.29	1.37	.75	.84	1.00	.97	.65	.88
Aggression	2.26	2.12	.76	1.27	2.51	2.27	.88	.90
Affection	3.12	3.01	.93	.77	1.51	1.59	.64	.53
Expressive behaviour	.42	.00	.54	.78	1.29	1.32	.72	1.15
Glory	3.08	3.08	.50	.74	1.45	1.50	.59	.60
Barrier imagery	1.75	1.63	.66	1.00	1.70	1.67	.80	1.03
Penetration imagery	1.44	1.42	.57	.58	1.88	1.85	1.04	.69
Total Body Boundary Imagery	3.19	3.13	.98	1.25	3.58	3.46	1.62	1.50

RID. Consistent with the first research hypothesis (H1), the results showed that the segments of the mystical text had a significantly lower frequency of primordial thought language, $p < .001$, than the segments of the psychotic text. However the segments of neither text differed in the frequency of conceptual thought language, $p = .40$. The segments of the mystical text also used significantly less Icarian lexis, $p < .001$, as compared to the segments of the psychotic text. In contrast, the segments of the mystical text had a significantly higher frequency of total emotion language, $p < .001$, including anxiety lexis, $p < .001$, affection lexis, $p < .001$, and glory lexis, $p < .001$, but less expressive behaviour lexis, $p < .001$, as compared to the segments of the psychotic text. No significant differences were identified in positive affect lexis, $p = .21$, sadness lexis, $p = .07$, or aggression lexis, $p = .21$. Thus, the second hypothesis (H2) was only partly substantiated.

BTD. The results indicated that the segments of the mystical text had a lower frequency of penetration imagery, $p < .01$, than the segments of the psychotic text. The segments of both texts

type in the frequency of barrier imagery, p = .82, or total frequency of body boundary imagery, p = .23, and thus the third hypothesis (H3) was rejected.

RID and BTD. Kendall's tau (τ) rank correlation coefficients were computed for all linguistic variables in both text types (Table 5 and 6). The results showed that primordial thought language was positively associated with penetration imagery in the mystical text and negatively associated with conceptual thought language, but no such associations were found in the psychotic text and thus the fourth hypothesis (H4) was only partly substantiated. In the mystical text, barrier and penetration imagery were only almost correlated, but the psychotic text reflected a higher positive association between barrier and penetration imagery. Moreover, the results indicated that penetration imagery was moderately positive associated with Icarian imagery in the mystical text, but not in the psychotic text. Additionally, the results showed that in the psychotic text, penetration imagery showed a moderately positive association with aggression lexis, and barrier imagery was moderately positive associated with glory lexis.

Discussion

The psychotic text had higher frequencies of primordial thought language and penetration imagery than the mystical text. These results might indicate that the mystical and psychotic experiences might differ in relation to the underlying cognitive processes. The inflated frequency of penetration imagery in the psychotic text, however, could be also associated to the immediacy of the stream-of-consciousness writing of Schreber's psychotic experiences, as compared to the post-hoc discourse of a transient religious-mystical experience. In particular, the results supported the assumption that psychotic text focuses primarily on spatial references and expressive behavioural reference instead of metaphorical and abstract expression (Jackson, 1995). In contrast, the mystical text showed a greater emotional awareness than the segments of the psychotic text, which lends some support to the tendency of emotional dissociation in psychotic disorders (Mikulincer & Shaver, 2007).

Two of the most interesting findings were a positive association between primordial thought language and penetration imagery in the mystical text and a positive association between barrier imagery and penetration imagery only in the psychotic text. These differences in correlation might indicate that both text types differ in the underlying organization of cognitive processes with respect to the ASC. Thus, the positive association of primordial thought language and penetration imagery in the mystical text might reflect a functional regulation between regressive states and penetrative boundary awareness. The mystical experience might represent a state of adaptive regression that allows one to confront aspects of the false self and to enhance the individuation of one's true self (Fauteux, 1995; Jones, 2007).

Hence, the notion of an adaptive function also resonates with the proposition that assumes mystical experiences to be situated within an containing and intermediate space of subjective and objective processes that allows the gradual integration of unconscious material, fantasies and conflicts within the consciousness awareness of the reality principle (Meissner, 1984; Rizzuto, 1979; Winnicott, 1971), and thus assuming an adaptive function to gain new insight that might lead to adaptive behavioural changes (Allison, 1968; Batson & Ventis, 1982; Jackson & Fulford, 1997). In fact, it has been proposed that Saint Teresa struggled with issues that hindered her spiritual development, i.e., attachment, false humility, and excessive concern over honour, which

she was able to confront during the purgative state (Conrow Coelho, 1990). In contrast, a chaotic organization of regression and changes in body boundary awareness in the psychotic text might reflect a dysfunctional self-reparative function within regressive states of psychotic disorders.

In addition, the differences of association between primordial thought and body boundary imagery in the religious-mystical and psychotic texts might also relate to Klein's (1935, 1946) developmental stages of the paranoid-schizoid and depressive position. Thus, psychotic and mystical experiences differ with respect to the functional regulation of the internal "bad" and "good" object images, where the "bad" object image reflects destructive personality aspects, such as death anxiety, which are first experienced during self-individuation in early infancy. The positive association between primordial thought language and penetration imagery in the mystical text showed might indicate that the religious-mystical experience allows the individual to find an inner feeling of functional oneness with the "bad" and "good" object parts as integral parts of the individual's personality, and thus to gradually overcome the depressive position (Klein 1935). Consistent with psychoanalytic theories (Bick, 1968; Bion, 1962; Ogden, 1989), the reduced body boundary awareness might perhaps reflect a regression to an earlier form of organizing experiences in which sensory-perceptions are transformed through the containing function of the mystical experiences, or perhaps closeness to God, into conscious material that allows an increased self-development and self-knowledge. A similar suggestion has been proposed by Rickman (1957, as cited in Graetz Simmonds, 2006) in his psychoanalytic study of Quaker practice and belief. This paper, entitled *"Need for Belief in God"*, put forward that the absence of the father figure and the practice of waiting for the inner light would enable an individual to experience the oceanic feeling. This need to connect to God would correspond to the Kleinian manic-depressive position (Klein, 1935) rather than narcissistic regression that characterizes cognitive functioning in psychotic states (Graetz Simmonds, p.133).

In contrast, the personality disintegration of psychotic experience is based on the reactive-ation of an early aggressive and chaotic object relationship that results in the hateful splitting of objects (Hartcollis, 1976). An individual that does such splitting relates to the self and others as part-objects that embody either entirely positive or negative personality aspects, which indicates an inability to surpass the Kleinian (1946) paranoid-schizoid position. The notion of part-object relation appears to be reflected in Schreber's emotional processes, where the psychotic text reflects an ambivalent emotional regulation in relation to body boundary awareness. The increased emotional susceptibility seen in the aggressive lexis with a low body boundary awareness might reflect a tendency to perceive the body as being invaded from the "inside" and "outside" by aggressive emotions. These aggressive emotions were possibly perceived as a force threatening to annihilate the remaining sense of ego (Jackson, 1995). Conversely, the examples of glory lexis comprise a set of lexical items that relate to a general positive (if also hysterical) emotional valence, which is more prominent in heightened body boundary awareness that distinguishes between the "inside" and the "outside" of the self. Thus, emotional responsiveness in high and low boundary awareness might reflect a dynamic emotion regulation in psychotic illnesses. As put forward by Klein (1928), the aggressive emotional valence in low boundary awareness might indicate heightened identification with the sensory perception of external threatening elements and their immediate threat to "destroy" the internal "goodness" of the remaining ego, in high boundary awareness, whereas the internally "good" parts are reinforced through the process of a glorified identification of the externally projected "good" parts.

Table 5. Kendall's tau correlation coefficients of all linguistic variables in Saint Teresa's *"The Way of Perfection"*

Linguistic variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Primordial thought	1.00												
2. Icarian imagery	.258*	1.00											
3. Conceptual thought	-.182	-.211*	1.00										
4. Emotion	.014	.057	-.087	1.00									
5. Positive affect	.198	.003	.018	.010	1.00								
6. Anxiety	.192	.110	-.016	.227*	-.034	1.00							
7. Sadness	.106	.010	-.092	.261*	.068	.147	1.00						
8. Aggression	-.049	-.009	-.127	.321**	-.161	.191	.259*	1.00					
9. Affection	-.013	.095	-.205*	.530**	-.081	.109	.049	.034	1.00				
10. Expressive behaviour	.178	.157	-.169	.069	-.090	-.029	.030	-.020	.140	1.00			
11. Glory	-.045	.121	.158	.088	-.136	-.256*	-.209*	-.157	.038	-.027	1.00		
12. Barrier imagery	.031	.069	-.121	-.098	-.034	-.029	-.130	-.017	-.096	.068	.197	1.00	
13. Penetration imagery	.272*	.349**	-.244*	-.068	-.037	-.030	-.017	.040	-.016	.166	.037	.226*	1.00

Notes: * $p < .05$ level, ** $p < .01$ level

Table 6 – Kendall's tau correlation coefficients of all linguistic variables in Daniel Paul Schreber's *"Memoirs of My Nervous Illness"*

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Primordial thought	1.00												
2. Icarian imagery	.231	1.00											
3. Conceptual thought	-.222	-.334**	1.00										
4. Emotion	.056	-.121	.151	1.00									
5. Positive affect	.161	.211	.026	.280*	1.00								
6. Anxiety	-.013	.150	.061	.233	.147	1.00							
7. Sadness	.182	.000	-.042	.551**	.508**	.274*	1.00						
8. Aggression	-.045	-.196	.088	.530**	-.061	.017	.204	1.00					
9. Affection	.145	.017	-.089	.164	.072	-.041	.057	-.084	1.00				
10. Expressive behaviour	.069	-.004	.091	.232	.390**	.118	.266*	-.117	.011	1.00			
11. Glory	.184	.128	-.002	.259*	.146	.146	.211	.115	.108	-.107	1.00		
12. Barrier imagery	.011	-.054	-.119	.121	-.020	-.122	.061	.067	.037	.000	.281*	1.00	
13. Penetration imagery	.097	-.054	-.110	.293*	.022	-.126	.158	.274*	.132	.091	.208	.431**	1.00

Notes: * $p < .05$ level, ** $p < .01$ level

Additionally, whereas regression in mystical experiences assumes the function of a transitional space to integrate unconscious material, the ambivalent emotional regulation in relation to changes in body boundary awareness within the psychotic experience resonates with Gerzi's (2005) attractor model. In relation to this study, glory lexis in high body boundary awareness might represent such an attractor model, wherein the black hole excludes the threatening insights from conscious awareness and "pulls the trauma patient…into a realm of emotional void, of hole object transformation, devoid of memories" (p.1033). In contrast, aggressive emotions in low boundary awareness might represent the symbolic tear (or original trauma) in the envelope that creates a chaotic internal state of acute threat ("bad objects") to the stability and well-being of the self, in which the split off external stimuli penetrate and disrupt the sense-perception.

Although a recent view holds that psychotic delusions might represent creative expressions, it is also assumed that it is not possible to create representations of these subjective trauma experiences within the void and alienation of the "black hole" (Laub & Podell, 1995). Hence, Gerzi (2000) suggests that the creative expression of these threatening perceptions would externalize the internal painful feelings, thus allowing the traumatic material to be gradually structured and integrated within a coherent self-schema (Gerzi, 2005). The expression of these frightening insights then would reframe the subjective trauma experience as a shared inter-subjective experience within a social environment that functions as a transitional space, and the witnessing "Others" of these artefacts become the holding containers and social skin that envelops the individual (Tietel, 2002). The social sharing of these creative objects might also further the ability to engage with socially accepted symbols and metaphors, as much as placing the psychotic forms of expression within a responsive sociocultural environment.

Furthermore, the results showed a co-occurrence of barrier and penetration imagery in the texts of both authors, which might support the notion of emotional fluctuation within the attractor model of trauma, as much as supporting Newbold's (1984) assumption that low barrier personalities would use high frequencies of both barrier and penetration imagery, in order to overcompensate for an inherent awareness of their underlying psychological fragility and vulnerability. The mystical text, however, showed a weaker association between barrier and penetration imagery as compared to the psychotic text, and thus reflecting Schreber's the inherent psychological instability as associated to the ambivalent object relationship dynamic. Hopper (2003) suggests that an extreme oscillating tendency between both crustacean and amoeboid features might moderate the need for, and fear of, intimacy. Steiner (2004) demonstrates that the notion of "gazing" might demonstrate Schreber's ambivalence between establishing a closeness with, and a distance from, objects, which might be representative of Schreber's psychopathological object relationship. For example, Schreber would gaze at objects, and when they failed to confirm his feelings of omnipotence, he would feel an intense sense of betrayal in combination with a feeling of triumph over the objects. The objects were then humiliated and defeated, before they could reassert their status through the use of counter-projection, by which they could re-establish their dominance over Schreber and reverse their humiliation (p. 270).

In summary, this study showed that the religious-mystical and psychotic discourse differed in the frequency and co-occurrence of primordial thought language, emotion and body boundary imagery, indicating that both text types vary in the underlying organization of cognitive processes with respect to the ASC. Future research could investigate how these research findings are replicable in relation to other discourses of religious-mystical and psychotic experiences, including religious conversion experiences (Cariola, in preparation).

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Appendix

Table 1. Semantic categories and examples of primordial and conceptual thought language in the RID (Martindale, 1975, 1990).

PRIMORDIAL THOUGHT LANGUAGE	**Examples of semantic items**
Drive	
Oral	*Breast, drink, lip*
Anal	*Sweat, rot, dirty*
Sex	*Lover, kiss, naked*
Sensation	
General sensation	*Fair, charm, beauty*
Touch	*Touch, thick, stroke*
Taste	*Sweet, taste, bitter*
Odour	*Breath, perfume, scent*
Sound	*Hear, voice, sound*
Vision	*See, light, look*
Cold	*Cold, winter, snow*
Hard	*Rock, stone, hard*
Soft	*Soft, gentle, tender*
Defensive symbolization	
Passivity	*Die, lie, bed*
Voyage	*Wander, desert, beyond*
Random movement	*Wave. Roll, spread*
Diffusion	*Shade, shadow, cloud*
Chaos	*Wild, crowd, ruin*
Regressive cognition	
Unknown	*Secret, strange, unknown*
Timelessness	*Eternal, forever, immortal*
Conscious alteration	*Dream, sleep, wake*
Brink-passage	*Road, wall, door*
Narcissism	*Eye, heart, hand*

Concreteness	*At, where, over*
Icarian imagery	
Ascend	*Rise, fly, throw*
Height	*Up, sky, high*
Descend	*Fall, drop, sink*
Depth	*Down, deep, beneath*
Fire	*Sun, fire, flame*
Water	*Sea, water, stream*
CONCEPTUAL THOUGHT LANGUAGE	
Abstraction	*Know, may thought*
Social behaviour	*Say, tell, call*
Instrumental behaviour	*Make, find, work*
Restraint	*Must, stop, bind*
Order	*Simple, measure, array*
Temporal references	*When, now, then*
Moral imperatives	*Should, right, virtue*
Emotions	
Positive affect	*Cheerful, enjoy, fun*
Anxiety	*Afraid, fear, phobic*
Sadness	*Depression, dissatisfied, lonely*
Aggression	*Angry, harsh, sarcasm*
Expressive behaviour	*Art, dance, sing*
Glory	*Admirable, hero, royal*

Table 2. Semantic categories and examples of barrier and penetration imagery in the BTD (Wilson, 2006), including all clothing items, vehicles and buildings.

Barrier imagery	**Examples of semantic items**
Clothing items	*Dress, robe, costume*
Animal with distinctive or unusual skins, including shelled creatures	*Alligator, badger, peacock, snails, shrimp*
Enclosed openings in the earth	*Valley, ravine, canal*
Unusual animal containers	*Bloated, kangaroo, pregnant*
Overhanging or protective surfaces	*Umbrella, dome, shield*
Armoured objects or objects dependent on their own walls	*Armour, battleship, ship*
Things being covered, surrounded or concealed	*Covered, hidden, behind*
Buildings	*Bungalow, cathedral, tower*
Enclosed vehicles	*Car, ship, truck*
Things with unusual container like shapes or properties	*Bagpipes, chair, throne*
Unique structures	*Tent, fort, hut*
Miscellaneous barrier words	*Basket, bubble, cage*

Penetration imagery	
Reference to the mouth being opened or used for intake or expulsion	*Eating, tongue, yawning*
Reference to evading, or bypassing or penetrating through the exterior of an object	*Autopsy, fluoroscope, x-ray,*
References to the body wall being broken, fractured, injured and damaged, including degeneration of surfaces	*Bleeding, stabbed, wounded, withered*
Openings in the earth that have no set boundaries	*Abyss, fountain, geyser*
All openings	*Anus, doorway, entrance*
Things which are insubstantial and without palpable boundaries	*Ghost, mud, shadow*
Transparency	*Crystal, see-through, transparent*
Miscellaneous penetration words	*Broken, frayed, hole*